Woodland Caribou Range Assessment and Range Planning in Saskatchewan

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Government of Saskatchewan

Background

Boreal woodland caribou are listed as "Threatened" under the federal Species at Risk Act (SARA) - Schedule 1. Schedule 1 requires a recovery strategy and action plan be created to help mitigate further risk of species decline. The recovery strategy for Boreal woodland caribou was posted on the federal Environment Canada Species at Risk Public Registry on October 5, 2012; its recovery goal is to achieve self-sustaining local populations of woodland caribou in all ranges throughout their current distribution in Canada, to the extent possible (Environment Canada 2012). The state of critical habitat necessary to achieve population and distribution objectives for recovery of woodland caribou was identified and assessed for all ranges across Canada, with the exception of the Boreal Shield portion of Saskatchewan's range, the SK1 conservation unit (Figure 1).

Environment Canada (2012) defines range as the geographic area occupied by a group of boreal woodland caribou that are subject to similar factors affecting their demography and used to satisfy their life history processes (e.g. calving, rutting, wintering). Saskatchewan Ministry of Environment contends that the provincial distribution of woodland caribou is continuous. However, there are directed studies are under way that may reveal biologically meaningful sub-divisions of our woodland caribou range. Range assessment will be used to identify and prioritize areas for landscape level planning based on the level of risk, with a primary focus on woodland caribou.

The population range has been identified as the most relevant scale at which to plan for the conservation of woodland caribou. As population ranges for woodland caribou are not yet defined in Saskatchewan, two woodland caribou conservation units were identified in the federal recovery strategy: SK1, the Boreal Shield; and SK2, the Boreal Plain (Figure 1). The federal assessment of critical habitat determined that insufficient information was available for SK1 to determine the status of the critical habitat. As a result, preliminary results from directed studies are required by 2016 to address population assessment information gaps in SK1 (Table 6, Environment Canada 2012). Once critical habitat for woodland caribou in SK1 has been identified by Environment Canada, the range plan for SK1 will be due three to five years later. The status of woodland caribou populations within the SK2 conservation unit was considered "as likely as not self-sustaining."

Undertaking landscape level natural resource planning is appropriate for management of the cumulative effects of habitat disturbance, and to ensure sufficient habitat is available for woodland caribou through time. A two part process is involved in this work; conducting an initial range assessment to inform the status of and risks to woodland caribou, and the development of a range plan that guides how land use will be managed through time to optimize habitat and natural resource use. Range assessment and risk identification will be used to determine priority range planning areas that will focus on management of woodland caribou habitat. For the Boreal Plain SK2 conservation unit, the province will develop and deliver range plans outlining effective protection for woodland caribou habitat and submit them to Environment Canada by end of 2017. Since the province will only be able to deliver range plan(s) for the high risk area as identified through a range assessment analysis, the province will also be submitting to Environment Canada, Saskatchewan's Protocol for (Woodland Caribou) Range Planning document. This document will provide an overview of the range assessment and range planning process, the results of the range assessment analysis and the planning boundaries for range plans in Sk1 and SK2.

What is a Range Assessment?

The range assessment process will assess the current state of a species range, population status and habitat availability. Specifically, range assessment will inform on relationships between natural and anthropogenic disturbance types, caribou population trends, predator/prey dynamics, forest successional trajectories, and timelines for the restoration and reclamation of disturbances to functional caribou habitat. Range assessments also result in the identification of issues and risks that can be used to direct further

The Ministry of Environment provides science-based solutions, compliance and mitigation measures aimed at protecting the environment, safeguarding communities and helping to ensure a better quality of life for all Saskatchewan residents.

planning and influence decision making. Risk is expressed as threats to a sustainable caribou population and threats to the sustainable caribou habitat. The range assessment process will result in reports and maps that can be used to evaluate and guide management of proposed and ongoing land use activity. As such, it is not a plan, but is an information gathering and evaluation process that guides planning and decision making.

The range assessment process will be led and completed by a ministry team with experience in caribou ecology, fire ecology, cumulative effects, environmental assessment and natural resource and land use management.

What is a Range Plan?

Environment Canada (2012) defines the range plan as an outline for how range-specific land and/or resource activities will be managed over space and time to ensure that critical habitat for woodland caribou is protected from destruction. As such, the range plan will reflect disturbance patterns on the landscape, propose measures to manage disturbance and maintain an ongoing, dynamic state of suitable habitat. The range plan will outline the province's plan to conserve caribou habitat and manage land use over time, and will be developed by the province with input from applicable external stakeholders.

The level of overall risk and how it varies across the caribou range will contribute to defining and prioritizing range plan areas, and the number of plans needed. Identifiable local caribou populations, human demography, predominant resource extraction, and administrative feasibility will also influence range planning areas. Due to the expansive size of the SK1 and SK2 conservation units and variation in anthropogenic activity across the landscape, it is anticipated that multiple range plans will be produced in Saskatchewan (Table 1). In the Boreal Plain SK2 conservation unit, a range plan will be developed for the high risk area first and this will be submitted by the end of 2017 to Environment Canada. The rest of the range planning areas will be addressed in the order of risk to woodland caribou. In the Boreal Shield SK1 conservation unit, range plans (based on Saskatchewan's Protocol for (Woodland Caribou) Range Planning) will be finalized three to five years after critical habitat has been identified by Environment Canada following the preliminary data submission at the end of 2016. Resource management objectives and strategies formed through the range planning process are informed by indicators evaluated during the range assessment, as well as cumulative effects assessment (CEA) done during the planning phase to determine potential outcomes shown through land use scenarios.

The use of CEA to guide management objectives and strategies is a key phase in planning, and will require collaboration between government, public, industry, First Nations and Métis to balance caribou and land use needs in Saskatchewan. Range plans will utilize existing land use management processes such as forest management plans, land use plans and the environmental assessment process, and possibly new tools such as the proposed Saskatchewan Environmental Code, beneficial management practices and improved access management.

The province has been assured that range plans will be considered by the federal Minister of the Environment in forming an opinion on whether the laws and actions of the province effectively protect critical habitat within Saskatchewan. As such, range plans will contain the background information necessary for the Minister to determine if critical habitat protection is in place or being pursued throughout the range. If the minister is of the opinion that there are no such provisions to protect critical habitat, he/she is required to recommend that a protection order (or safety net order under the federal Species at Risk Act 2002) be made.

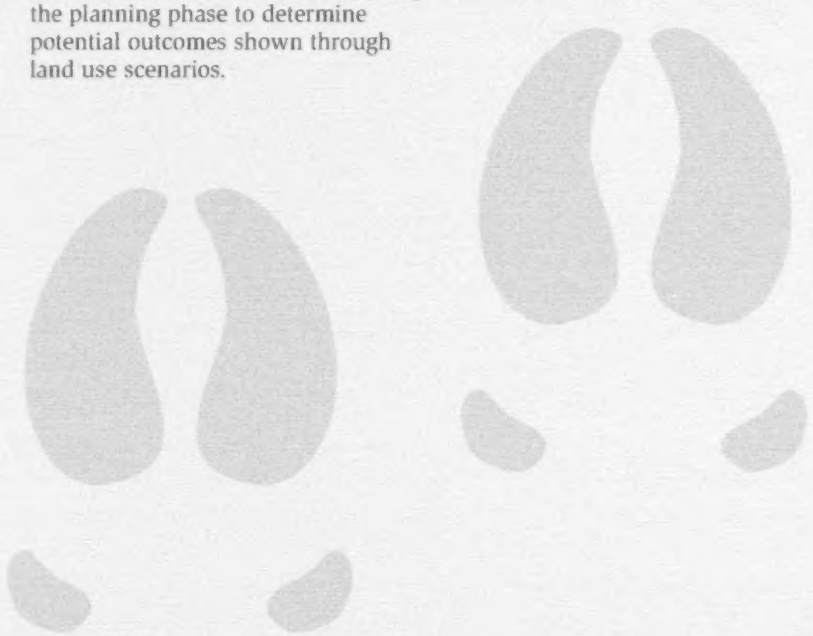
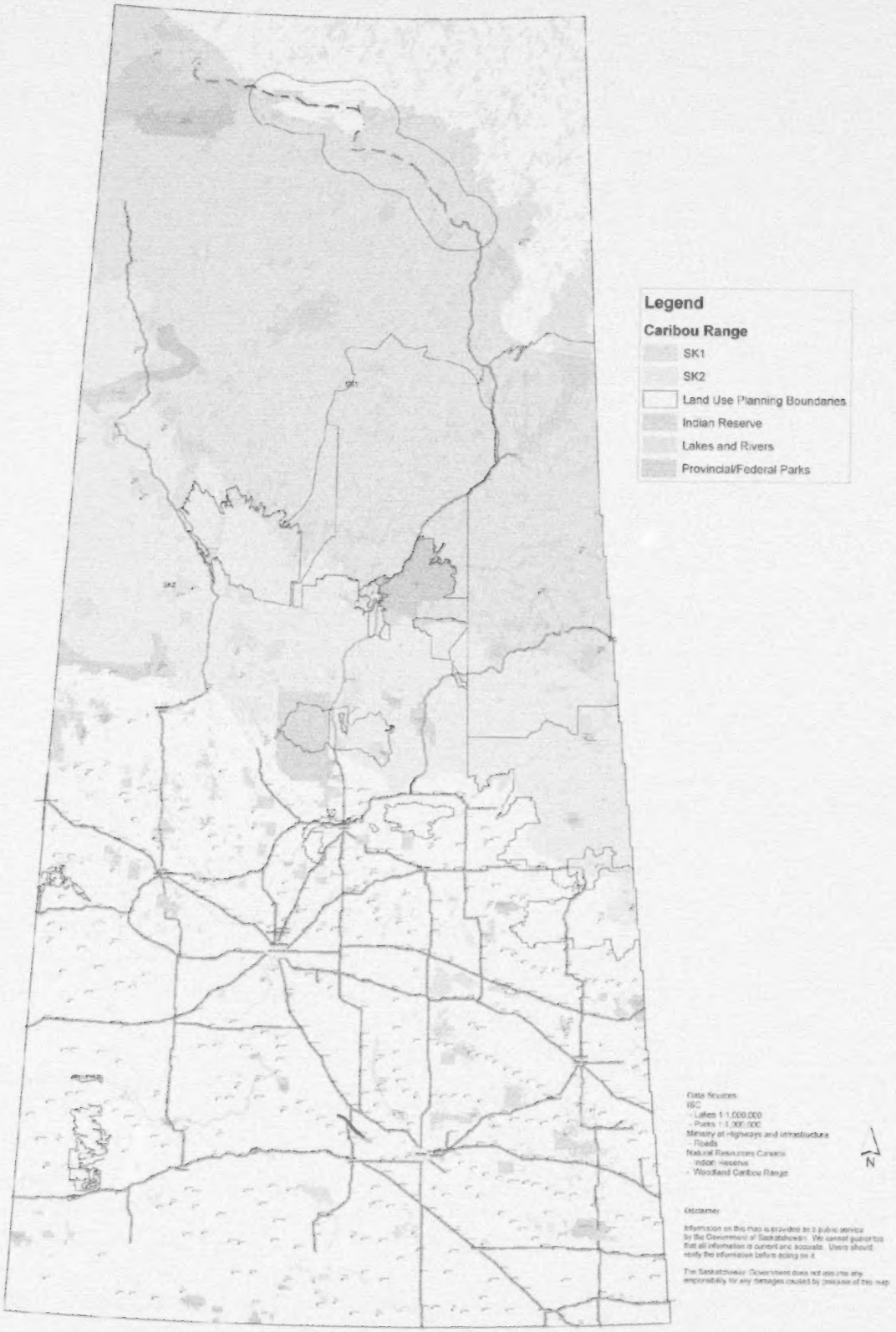


Figure 1. Woodland Caribou Conservation Units in Saskatchewan


Legend
Caribou Range
SK1
SK2
Land Use Planning Boundaries
Indian Reserve
Lakes and Rivers
Provincial/Federal Parks
Data Sources
ISC
- Lakes 1:1,000,000
- Parks 1:1,000,000
Ministry of Highways and Infrastructure
- Roads
Natural Resources Canada
- Indian reserve
- Woodland Caribou Range
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Range Assessment and Range Planning Process

The range assessment process is necessary to evaluate habitat condition and population status in each range. The assessment information will be used to guide the range planning process, which in turn will result in the development of a range plan. These processes will follow a six step procedure that involves: issues scoping; characterizing the range condition; characterizing level of current risk; defining management objectives and strategies; determining management strategies; and monitoring and adaptation. Based on available information and timelines, some of the activities in each of the steps may be occurring concurrently within a planning area or between different range planning areas. Each of these steps are described below.

Issues Scoping

Issues scoping provides direction to focus the range assessment process. Issues identified are used to target additional studies or data deficiencies to provide better information on woodland caribou habitat and population. This is an iterative process that will be repeated for each range plan, including the five year updates to range plans.

Current issues impacting woodland caribou will be used in the initial range assessment to characterize current range condition and evaluate current risk. Initial issue scoping is conducted internally by the ministry, and largely overlaps with issues already identified in the federal recovery strategy and the provincial woodland caribou conservation strategy. Current issues were identified based on their likelihood of impacting woodland caribou populations and habitat.

Subsequent issue scoping in future range plan iterations will include and benefit from additional knowledge (i.e. aboriginal traditional knowledge and future scientific information) about population trends, harvest, habitat availability and connectivity. This information is currently being collected through directed studies, but will not be available in time for the initial round of range assessment and range planning.

Characterizing the Range Condition

Outstanding information requirements to support the range assessment and planning process have been identified and are being addressed through specific directed studies. Research studies including radio-collaring telemetry, effects of fire and human disturbance on woodland caribou habitat and collecting aboriginal knowledge are underway to help determine the current state of woodland caribou population dynamics and habitat use in the SK1 conservation unit. Research in the SK2 conservation unit entails gathering genetic information to better understand how the landscape influences populations, and the woodland caribou population structure. Ongoing research across the woodland caribou range will help assess population trend over time that can be reported in successive range plans, as well as monitor the effectiveness of objectives and strategies developed through the range planning process. Unfortunately, much of this information will not be available until 2016 after the initial range plan is in draft. As such, information to characterize the range for the initial range planning process will include the main variables that impact caribou habitat – anthropogenic and fire disturbance.

Working with communities to incorporate aboriginal traditional knowledge in range planning is an important component of the range assessment and planning phase. Collection of this information will be completed over multiple years, and where possible, aboriginal traditional knowledge will be used to help characterize the range. Sharing knowledge with partners is important in the range characterization process to ensure the best available information is used, and that users on the landscape are involved in creating solutions to land use issues. As the range assessment and planning processes proceed, it is anticipated that additional information requirements will be identified and will result in the implementation of additional research studies.

A ministry core planning team (CPT) will lead the initial characterization of woodland caribou range as well as development of each range plan. The CPT will consist of a range plan coordinator, forestry, fish and wildlife, aboriginal relations, landscape planning and environmental assessment representatives, with technical assistance from other ministry staff as needed.

Characterizing Level of Current Risk

Characterizing the current level of risk across woodland caribou habitat occurs through an initial current state assessment, followed by an assessment of potential future land scape scenarios. Depending on the complexity of the assessment area, the amount of current and future anthropogenic activity and the quality of woodland caribou habitat, these assessments may take six to nine months to complete within the ministry.

The range is stratified by anthropogenic disturbance, wildfire disturbance and probable caribou habitat. Disturbance and habitat parameters measured during the initial risk assessment will be used to populate a habitat condition balance sheet. This balance sheet, and future modifications to it, will be used to record and demonstrate if management strategies are effective in improving sustainability of caribou populations over time. The assessment outcomes will be reported by ecodistrict/landscape areas, and will be used to highlight and prioritize range planning boundaries.

Defining Management Objectives and Strategies

After range planning areas have been identified and prioritized, the range planning process will be initiated beginning with the highest risk area. The range planning phase begins with determining an ideal land use scenario, then defining management objectives, performance measures and management strategies to move toward the chosen scenario. Direction and insight will be gained from land and resource users throughout the woodland caribou range during the planning process. Engaging various stakeholders and land users is important to ensure woodland caribou habitat and populations are sustainable through time. Through integrated development of management strategies, practical and effective solutions in managing the landscape for woodland caribou habitat and land use can be found. Consistency in using an engagement structure is important to ensure fair contribution in the range planning process (Figure 2).

Land use scenario planning predicts outcomes of management actions in the planning area given different types, levels and intensities of development and activity as well as new habitat in areas that were previously disturbed. An initial suite of scenarios will be developed by the ministry working group/CPT at the start of the range planning phase. Land use scenarios will be delivered by the CPT to stakeholder groups during range planning to discuss and confirm issues, relationships and evaluate potential future risks identified through the land use scenarios. Management objectives and strategies that can be applied to achieve land use goals will be developed with the stakeholder group during the range planning process. The development of these objectives will include the involvement of stakeholders and land users, and will therefore take 12 to 18 months to complete.

The range planning process will require input and establishment of Interest Tables as well as an Integrated Range Planning Table (IRPT). Interest Tables will consist of a First Nations table, a Métis table and an Industry/NGO/Municipal table. The IRPT will consist of representatives from Métis Locals, First Nations, Tribal Councils, Métis Nations, municipal, NGO, industry and other interests. Due to the number of potentially interested parties, and to ensure effective and meaningful dialogue during planning process, the IRPT will break out into the three Interest Tables. These tables will reconvene on an annual or bi-annual basis (depending on planning needs and progress) to discuss planning issues. The proposed structure of the Interest Tables and IRPT are provided in Figure 2. Initiating the process will require a meeting between the CPT and IRPT to introduce the range planning process and identify objectives. The initial IRPT meeting will be followed up by regular Interest Table meetings. The CPT will be present at each Interest Table and IRPT meeting to share information and incorporate feedback and knowledge shared by each group.

The Government of Saskatchewan will consult with and accommodate, as appropriate, First Nations and rights-bearing Métis communities in advance of decisions or actions which may adversely impact Treaty and Aboriginal rights. The ministry will utilize comprehensive participatory range planning described above and depicted in Figure 2, in order to identify and accommodate potential adverse impacts to Treaty or Aboriginal rights and the pursuit of traditional uses that may be associated with the range plans. First Nations and Métis Locals whose Treaty or Aboriginal rights and traditional uses are potentially impacted within a specific planning area will be invited to participate directly in range planning activities.

Table 1.

Timelines for initiating range assessment and range plan development, as well as timelines for range plan submission for Boreal Plain SK2 Conservation Unit. Timelines are expressed as calendar year quarter. Range assessment and range planning will occur every five years. Range plan boundaries determined after risk assessment is conducted. *Range planning will be initiated according to data availability. If insufficient data is available additional data collections will proceed prior to the initiation of the Range Plan.

Range Assessment	Range Plan Area(s)	Range Plan initiation*	Range Plan Submission	Range Assessment and Plan Update
Q1-Q3 2014	Highest risk	Q3 2014	Q3 2017	
Q1-Q3 2014	Moderate risk	Q1 2015	Q3 2017 or later	Occurs every five years
Q1-Q3 2014	Low risk	Q2 2015	Q3 2017 or later	

Note: Subject to change due to resources and contingencies.

Determining Management Strategies

The CPT will work with the Interest Tables and IRPT in developing a suite of management strategies that can be used to maintain appropriate habitat levels for woodland caribou, as defined by Environment Canada, but also be practical from a standpoint of applied land use. These strategies will include guidance and direction on state of woodland caribou habitat, incorporating a range of best practices, access management, temporal habitat availability, a list of management activities to maintain or increase critical habitat for woodland caribou, and list of legislative tools and management policy that protect critical habitat. Existing or new legislation will be considered in order to meet the management objectives. Due to the level of involvement with stakeholders and land users, this stage may take up to two years to complete.

Monitoring and Adaptation

The province is responsible for ongoing monitoring of habitat condition, and will work with Environment Canada to verify that protection is effective over time. Range plans will be updated with new pertinent information and re-assessed every five years. As previously noted, ministry performance measures will be developed for each range plan to measure the efficacy of the various management strategies outlined in the plan. These performance measures will be assessed and monitored throughout implementation of the range plan, and reported during plan review every five years. The province may seek assistance from land users in supporting the collection of population and habitat information as it pertains to their specific land use activity.

The steps involved in each of the range assessment (Figure 3) and range planning phases (Figure 4) will be adapted through time as more information on woodland caribou population, habitat and land use factors are provided, and the planning process is adapted and improved.

Once completed, range plans will undergo internal review, review by stakeholders and local groups, and be available for a 60 day public review. The ministry will document the comments and feedback and work to review and revise the draft range plan as needed. The plan will then be submitted to the Minister of Environment for approval, and the final approved range plan will be submitted to Environment Canada.

Figure 2. Engagement Structure for the Woodland Caribou Range Planning Process

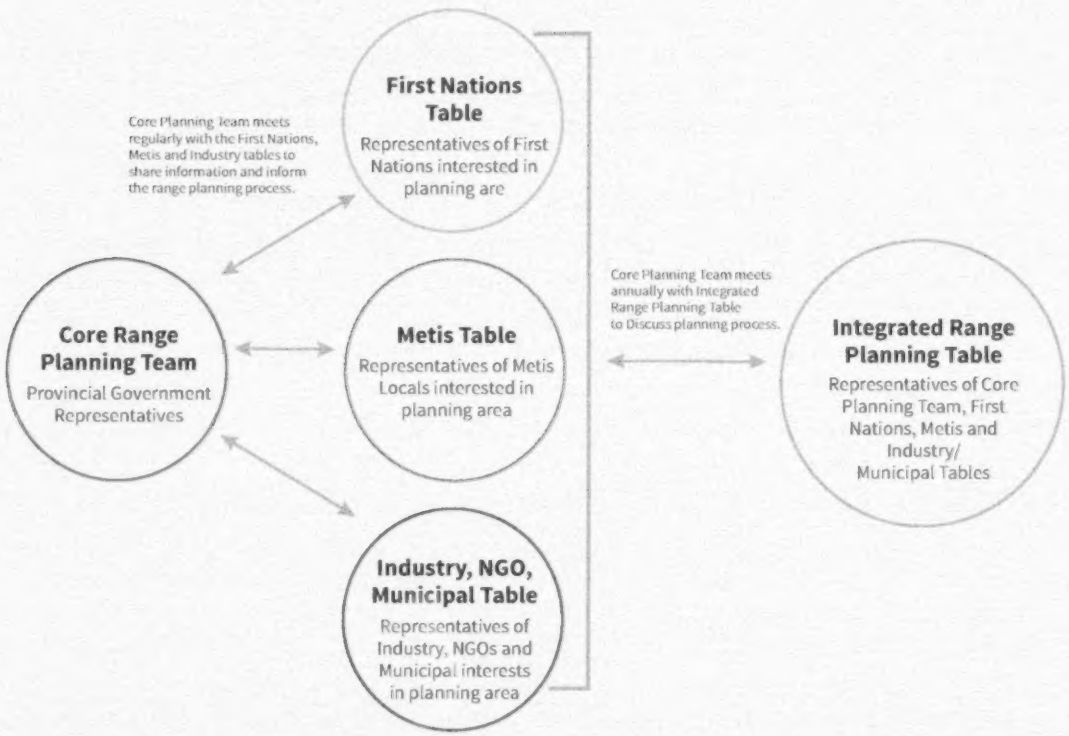

First Nations Table
Representatives of First Nations interested in planning are
Core Planning Team meets regularly with the First Nations, Metis and Industry tables to share information and inform the range planning process.
Core Range Planning Team
Provincial Government Representatives
Metis Table
Representatives of Metis Locals interested in planning area
Industry, NGO, Municipal Table
Representatives of Industry, NGOs and Municipal interests in planning area
Core Planning Team meets annually with Integrated Range Planning Table to Discuss planning process.
Integrated Range Planning Table
Representatives of Core Planning Team, First Nations, Metis and Industry/ Municipal Tables

Figure 3. Woodland Caribou Range Assessment Process

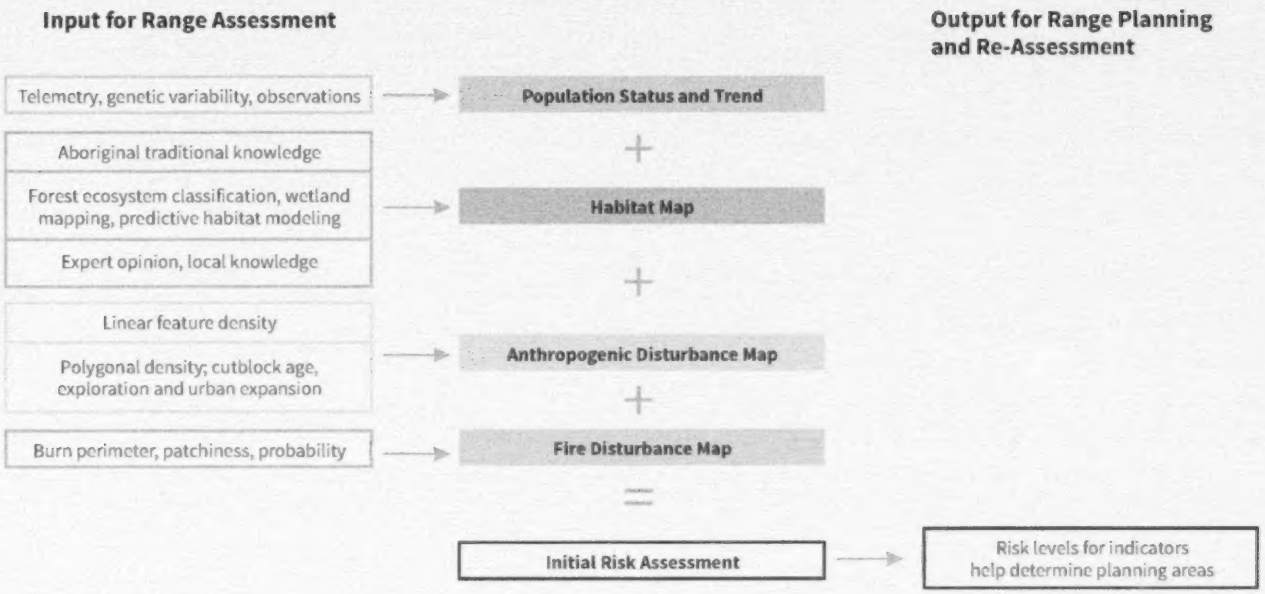
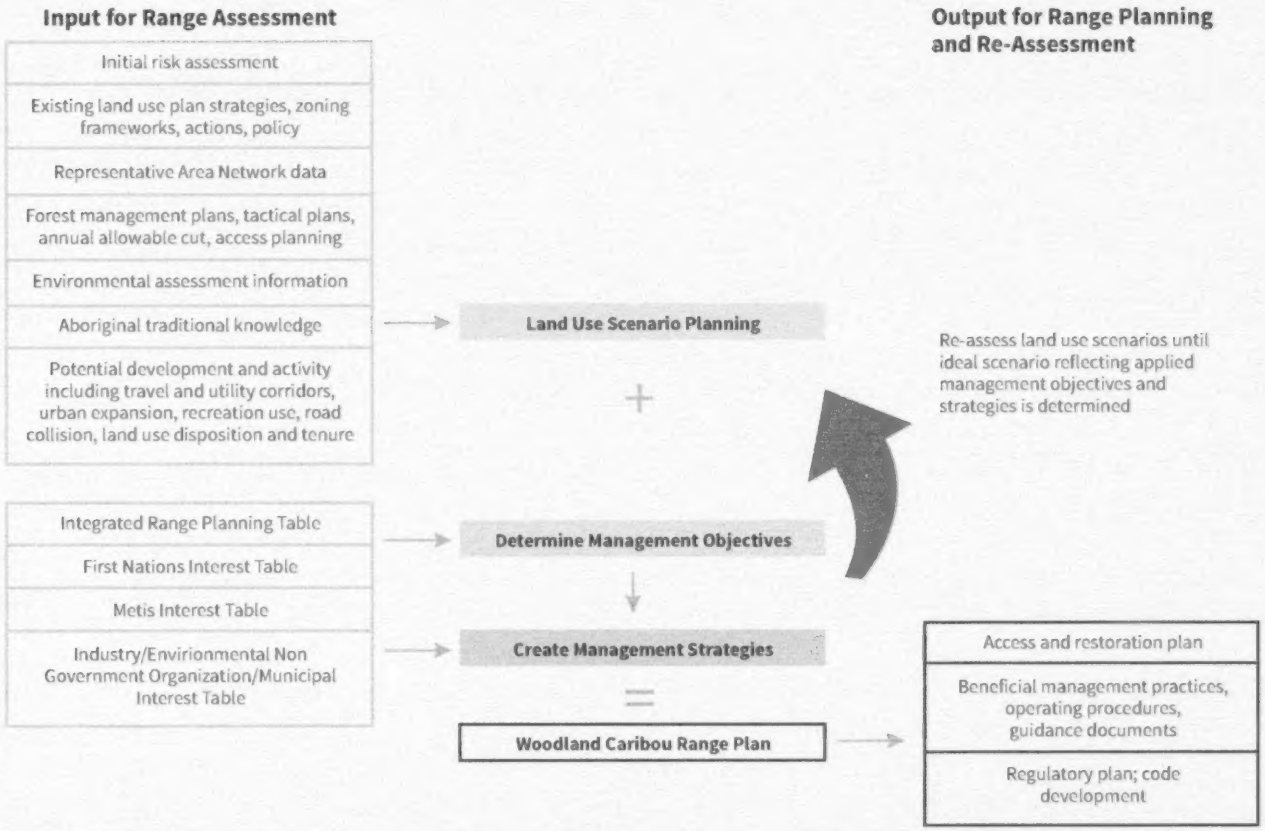

Input for Range Assessment
Output for Range Planning and Re-Assessment
Telemetry, genetic variability, observations
Population Status and Trend
Aboriginal traditional knowledge
Forest ecosystem classification, wetland mapping, predictive habitat modeling
Expert opinion, local knowledge
Habitat Map
Linear feature density
Polygonal density; cutblock age, exploration and urban expansion
Anthropogenic Disturbance Map
Burn perimeter, patchiness, probability
Fire Disturbance Map
Initial Risk Assessment
Risk levels for indicators help determine planning areas

Figure 4. Woodland Caribou Range Planning Process


Input for Range Assessment
Output for Range Planning and Re-Assessment
Initial risk assessment
Existing land use plan strategies, zoning frameworks, actions, policy
Representative Area Network data
Forest management plans, tactical plans, annual allowable cut, access planning
Environmental assessment information
Aboriginal traditional knowledge
Potential development and activity including travel and utility corridors, urban expansion, recreation use, road collision, land use disposition and tenure
Land Use Scenario Planning
Re-assess land use scenarios until ideal scenario reflecting applied management objectives and strategies is determined
Integrated Range Planning Table
First Nations Interest Table
Metis Interest Table
Industry/Envirionmental Non Government Organization/Municipal Interest Table
Determine Management Objectives
Create Management Strategies
Woodland Caribou Range Plan
Access and restoration plan
Beneficial management practices, operating procedures, guidance documents
Regulatory plan; code development

For further information, contact the Ministry of Environment Client Service Office at 1-800-567-4224 (toll free in North America) or email woodlandcaribouproject@gov.sk.ca.